REMARKS

Claims 1, 3-6 and 12-26 are in this application and are presented for consideration. By this Amendment, Applicant has amended claims 1, 3, 4, 5 and 6. Applicant has also canceled withdrawn claims 2 and 7-11 subject to Applicant's right to file a divisional application for the features provided in these claims at a later date. New claims 12-26 have been added.

The drawings have been objected to because the Office Action states that the drawing sheet numbers are placed in the middle of the bottom margin of the sheets. Applicant has attached a replacement sheet of drawings of Figures 1-11 to remove the drawing sheet numbers at the bottom of the each figure.

The abstract of the disclosure has been objected to because the Office Action states that it is replete with legal phraseology and is not on a separate sheet of paper. Applicant has attached a substitute specification along with a marked up copy. Specifically the abstract has been placed on a separate sheet and it has been amended to remove the legal phrases.

The disclosure has been objected to because the Office Action states that it does not include the sections and headings in the proper order. Applicant has attached a substitute specification to provide the proper sections and headings. Applicant has also corrected the disclosure for grammatical errors as shown in the substitute specification. Applicant wishes to thank the Examiner for the careful review of the specification.

Claims 1 and 3 have been objected to because of minor informalities. Applicant has amended the claims paying close attention to the Examiner's helpful remarks. Applicant wishes to thank the Examiner for the careful review of the claims.

Claim 1 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Betti et al. (US 2003/0027653 A1) in view of Nystrand (US 3,905,260).

The present invention relates to an apparatus for producing small paper rolls. The apparatus comprises a rewinding device, a trimming device, a trimmed roll storing element and a cutting-off machine. The trimming device receives uncut paper logs from the rewinding machine and trims at least one end of the uncut paper logs to form trimmed paper logs. The trimmed paper logs are then received by the trimmed roll storing element. The trimmed roll storing element transfers the cut logs to the cutting machine. The cutting machine cuts the trimmed logs into smaller logs. Applicant has discovered that conventional trimming techniques disadvantageously produce a lot of waste since the rolls are cut such that the length of the rolls are never the same. The disadvantageously requires that each roll be cut again to make the rolls have a uniform length. This significantly increases operating costs since a large amount of the paper is wasted. The present invention advantageously solves the problem of producing paper rolls that are of non-uniform length. The small rolls produced by the cutting-off machine provide the result that no trim has to be cut since the logs fed to the machines are already trimmed by the trimming device. This significantly reduces the amount of production waste since the rolls fed to the cutting-off machine already have the desired constant dimensions. Further, it advantageously reduces collection and disposal time of trimmed pieces since the production of the trimmed pieces are all located in the trimming device and trimmed pieces are not located in multiple devices. This significantly reduces production costs.

These features and cost saving advantages are neither taught nor suggested by the prior

art as a whole, including Betti et al. and Nystrand. The references as a whole fail to teach and fail to suggest the combination of features as claimed. The prior art fails to suggest the novel combination of a trimming device that trims uncut paper logs which are then stored in a trimmed log storing unit and are supplied to a cutting machine that cuts the trimmed logs into specific lengths to form a plurality of small rolls. This advantageously simplifies and improves the log-cutting process by significantly reducing paper waste. This advantageously provides an apparatus that is cost-effective and reliable.

Betti et al. is concerned with a severing machine that comprises a series of disk-shaped blades 23A, 23B. Betti et al. fails to teach and fails to suggest a storing element that receives trimmed logs from a trimming device and supplies the trimmed logs to a cutting machine. The rotating feeder 11 of Betti et al. merely feeds the logs to be cut by the disc blades 23A and 23B. The rotating feeder 11 of Betti et al. merely feeds uncut logs to be cut by the blades 23A and 23B. In contrast to Betti et al., the present invention takes a very different approach. In the present invention, the trimming device trims at least one end of each uncut log to form trimmed paper logs. The trimmed paper logs are received by the trimmed log storing unit and are then supplied to the cutting-off machine so that each trimmed log can be cut into specific lengths to form a plurality of small rolls. This significantly reduces manufacturing costs since logs of uniform length are created which do not have to be cut again, which advantageously reduces the amount of paper waste produced. Betti et al. fails to disclose such advantages since Betti et al. only suggests feeding a severing machine with a series of logs by a storage unit 3. Betti et al. is completely void of any suggestion that the severing machine is fed already trimmed logs.

In fact, Betti et al. fails to disclose a cutting-off machine that is fed already trimmed logs as claimed. Reference numerals 23A and 23B of Betti et al. merely refer to blades and not a trimming device and a cut-off machine as featured in the claimed combination. Even if it was assumed that blade 23B of Betti et al. was the equivalent of Applicant's cutting-off machine, Betti et al. provides no teaching that the blade 23B cuts an already trimmed log into a plurality of small rolls. As such, Betti et al. fails to disclose important aspects of the present invention.

Nystrand takes a very different approach than Betti et al. Instead of being concerned with a double-bladed severing machine, Nystrand discloses a sawing system for transversely cutting logs of wound paper along four lanes of a conveyor belt. Nystrand fails to teach or suggest a cutting-off machine that receives already trimmed paper logs from a trimmed paper log storing unit. At most, Nystrand discloses a bucket conveyor for receiving elongated logs and dumping them into four lanes wherein the logs are advanced toward an orbital saw in a sequential manner. Nystrand does not disclose that the orbital saw receives pre-trimmed logs, which are pre-trimmed by a trimming device, from a storing unit. In fact, Nystrand provides no suggestion for a trimming device that trims at least one end of a paper log to form a plurality of trimmed paper logs. Nystrand fails to appreciate the problem that the present invention solves. Instead of being concerned with maintaining a uniform length of rolls produced by a cutting-off machine, Nystrand is concerned with the problem with advancing logs for cutting in such a way that bottlenecking of the cut pieces on a conveyor belt is avoided. Nystrand fails to disclose two separate cutting machines wherein the logs from one cutting machine is supplied to the other cutting machine by a trimmed log storing unit. Nystrand only suggests cutting logs

of wound paper and subdividing them into small rolls with just one orbital saw. As such, Nystrand directs the person of ordinary skill in the art away from the features of the claimed combination. Accordingly, Applicant respectfully requests that the Examiner favorably consider claim 1 as now presented and all claims that depend thereon.

Claims 1 and 3-6 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Gambaro et al. (US 2002/0121170) in view of Nystrand, and in further view of Friden (US 2,047,021).

Gambaro et al. is concerned with an apparatus that cuts an entire log into individual rolls by delivering the logs into a distribution sprocket that holds the logs while they are cut. However, Gambaro et al. provides no teaching or suggestion of a trimmed log storing unit that receives trimmed logs from a trimming device and supplies the trimmed logs to a cutting-off machine so that the trimmed logs are cut up into smaller rolls. Gambaro et al. merely discloses cutting an entire log into individual rolls. However, Gambaro et al. provides no suggestion that the logs fed to the distribution sprocket are pre-trimmed by a separate trimming device. It is significant that the trimming device first trims the uncut paper logs in the present invention because it advantageously reduces collection and disposal time of trimmed pieces since the production of the trimmed pieces are all located in the trimming device and not in multiple devices. This significantly reduces production costs since less paper is wasted. Gambaro et al. fails to disclose such manufacturing savings advantages since Gambaro et al. only discloses that an entire log is cut by a multi-bladed rotary saw and does not disclose two separate cutting devices as claimed. Gambaro et al. fails to disclose two separate cutting machines wherein the

trimmed logs from one cutting machine is supplied to the other cutting machine by a trimmed log storing unit. As such, Gambaro et al. fails to teach important aspects of the claimed combination.

As previously discussed above, Nystrand does not provide any suggestion for a cutting-off machine that receives already trimmed paper logs from a trimmed paper log storing unit. Further, Friden fails to provide any suggestion for the combination of a storing element that receives trimmed logs from a trimming device and supplies the trimmed logs to a cutting machine. Friden merely discloses a trimmer, but fails to provide any teaching for modifying the apparatus of Gambaro et al. Gambaro et al. already discloses a cutting machine that provides for both cutting and trimming of paper logs. As such, Gambaro et al. does not require a separate trimming device. The person of ordinary skill in the art would not be directed to combine the teachings of Friden and Gambaro et al. since Gambaro et al. excludes the use of a separate trimmer since the apparatus of Gambaro et al. already has paper log trimming features. The references as a whole fail to provide any suggestion of using the teachings of Friden and Nystrand to modify the apparatus of Gambaro et al. The references as a whole do not teach and do not suggest the combination of two separate cutting machines wherein the trimmed logs from one cutting machine is supplied to the other cutting machine by a trimmed log storing unit. As such, the prior art references as a whole takes a different approach and does not teach or suggest the features of the claimed combination. Accordingly, Applicant respectfully requests that the Examiner favorably consider claim 1 as now presented and all claims that depend thereon.

Applicant has added new claims 12-26. New independent claims 12 and 18 provide for features similar to claim 1 as now presented but in different claim language. Dependent claims 13-17 and 19-26 clarify the features of the invention, including the location of the cutting-off machine relative to the trimmed paper log storage unit and the trimming device. Applicant respectfully requests that the Examiner favorably consider new claims 12-26.

Favorable consideration on the merits is requested.

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JJM:BMD
71665-10
Attached: (11) Sheets of Replacement Drawings
Substitute Specification
Marked-Up Version of the Specification

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